DOCUMENT OF THE INTER-AMERICAN DEVELOPMENT BANK

DOMINICAN REPUBLIC

SUPPORT FOR THE TRANSITION TO COMPETITIVE AGRICULTURE

(DR-0138)

LOAN PROPOSAL

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ABBREVIATIONS

AFCONAGRO	Asociacion de Fabricantes de Conservas del Agro, Inc.
AID	United States Agency for International Development
AOP	Annual Operating Plans
BANRESERVAS	Banco de Reservas de la República Dominicana [Reserve Bank]
BPA	Best Practices in Agriculture
CCU	Central Coordination Unit
CENDA	Centro Norte
CESDA	Centro Sur
CONCA	National Commission for the Codex Alimentarius
CONIAF	National Agricultural and Forestry Research Council
COTECA	Technical Committee on Food Sciences
CVMA	Centros de Venta de Materiales Agropecuarios [sales centers for agricultural materials]
DIA	Department of Agricultural Research
DSA	Department of Animal Health
DSV	Department of Plant Health
IAD	Instituto Agrario Dominicano [Dominican Agrarian Institute]
IDIAF	Agriculture and Forestry Research Institute
INAZUCAR	National Sugar Institute
INDA	National Cotton Institute
INDRHI	Water Resources Institute
INESPRE	Price Stabilization Institute
INTABACO	National Tobacco Institute
JAD	Junta Agroempresarial Dominicana [Dom. Agribusiness Board]
LAVECEN	Central Veterinary Laboratory
PROSEMA	Farm machinery services project
PROSESA	Productora de Semillas [seeds producer]
PSE	Producer Subsidy Equivalent
RP	Registry of Producers
SEA	Secretaria de Estado de Agricultura [Ministry of Agriculture]
SINAF	National Agricultural and Forestry Research System
SPS	Agreement on Application of Sanitary and Phytosanitary Measures
ULS	Health Legislation Unit
URPE	Regional Planning and Economic Units
UTE	Technical Execution Units
WTO	World Trade Organization

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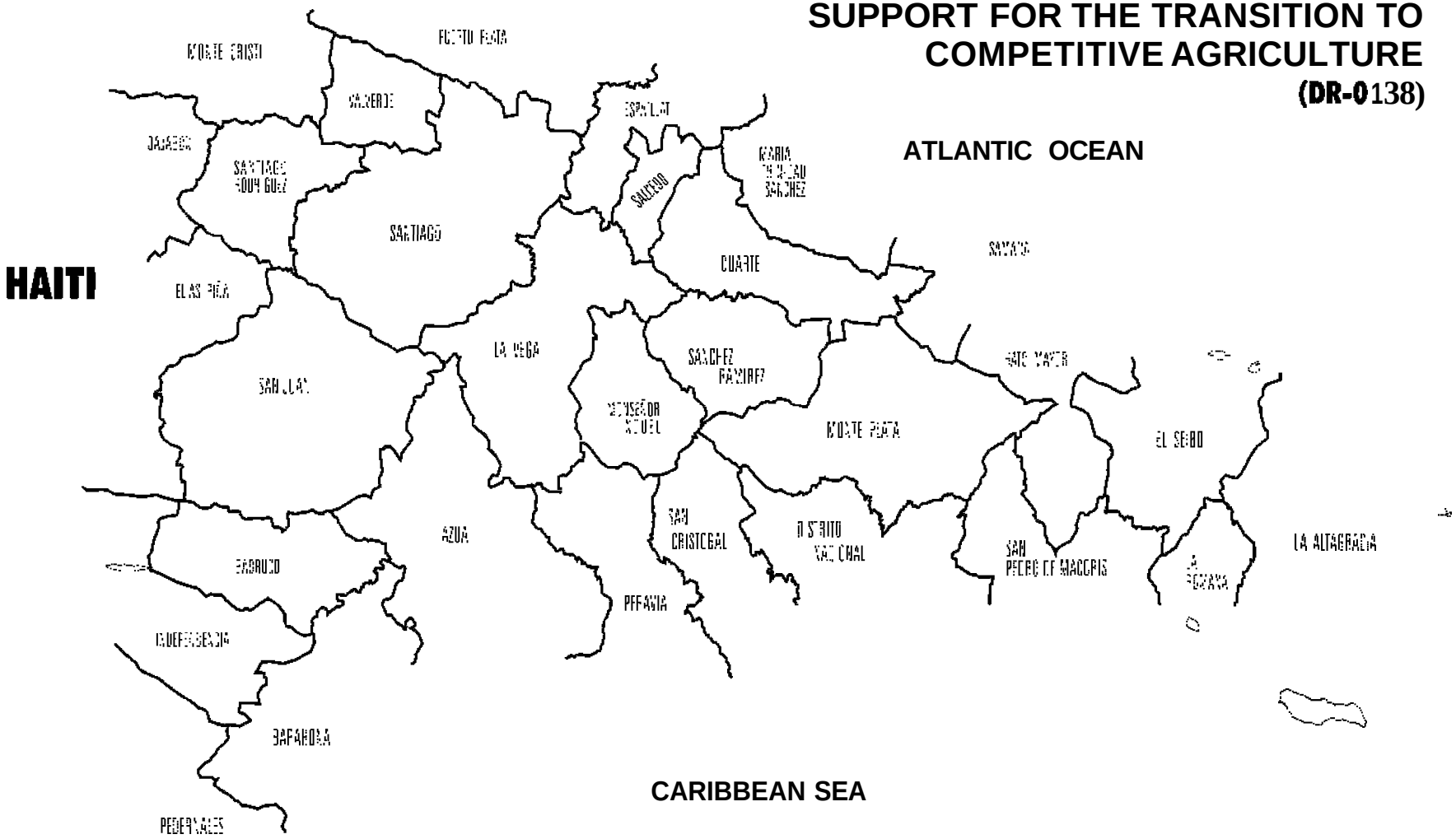

This map prepared by the Inter-American Development Bank has not been approved by any conipelent authority and its inclusion in the loan document has the exclusive objective of indicating the area of Influence of the project proposed torfinancing.

INTER-AMERICAN DEVELOPMENT BANK
Regional Operations Support Office
Operational Information Unit

DOMINICAN REPUBLIC

IDB LOANS

APPROVED AS OF FEBRUARY 28, 2002

	US$Thousand	Percent
TOTAL APPROVED	***2,080,400***	
DISBURSED	*1,539,602*	*74.0%*
UNDISBURSED BALANCE	*540,798*	*26.0%*
CANCELLATIONS	*555,947*	*26.7%*
PRINCIPAL COLLECTED	*564,825*	*27.1%*
APPROVED BY FUND		
ORDINARY CAPITAL	*1,296,844*	*62.3%*
FUND FOR SPECIAL OPERATIONS	*698,380*	*33.6%*
OTHER FUNDS	*85,176*	*4.1%*
OUSTANDING DEBT BALANCE	***974,778***	
ORDINARY CAPITAL	*533,138*	*54.7%*
FUND FOR SPECIAL OPERATIONS	*431,660*	*44.3%*
OTHER FUNDS	*9,980*	*1.0%*
APPROVED BY SECTOR		
AGRICULTURE AND FISHERY	*440,206*	*21.2%*
INDUSTRY, TOURISM, SCIENCE -TECHNOLOGY	*120,961*	*5.8%*
ENERGY	*321,801*	*15.5%*
TRANSPORTATION AND COMMUNICATIONS	*225,355*	*10.8%*
EDUCATION	*173,100*	*8.3%*
HEALTH AND SANITATION	*185,187*	*8.9%*
ENVIRONMENT	0	0.0%
URBAN DEVELOPMENT	*30,999*	*1.5%*
SOCIAL INVESTMENT AND MICROENTERPRISE	*330,860*	*15.9%*
REFORM PUBLIC SECTOR MODERNIZATION	*176,930*	*8.5%*
EXPORT FINANCING	*20,296*	*1.0%*
PREINVESTMENT AND OTHER	*54,706*	*2.6%*

**Net of cancellations with monetary adjustments and exportfinancing loan collections*

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DOMINICAN REPUBLIC

TENTATIVE LENDING PROGRAM

US$ Millions

2002			
	DR0138	SUPPORTING FOOD AND AGRICULTURAL SECTOR C	55.0
	DR0145	MANAGEMENT OF DISASTER RISK PROGRAM	5.0
	DRO 136	PRIVATIZATION OF INTERNATIONAL AIRPORTS	150.0
	DRO 125	BASIC EDUCATION III	54.0
	DRO 147	ANDRES POWER PLANT	75.0
	DRO 149	INFORM. SOCIETY'S INSTITUTIONAL DEVELOP	5.6
		TOTAL A	344.6
	DRO 146	PENSIONAL REFORM IMPLEMENTATION	5.0
	DRO 152	COMPETITIVE ADVANTAGE DEVELOPMENT	7.0
		TOTAL B	12.0
		TOTAL 2002	356.6
2003			
	DRO 153	INSTITUTIONAL STRENGTHENING FOR LOCAL DEV	40.0
	DR0148	SECTOR FACILITY LOAN EXTERN-4L BUSINESS	5.0
	DRO 154	TERCIARY EDUCATION IMPROVEMENT	34.0
	DRO 143	REHABILITATION HISTORICAL CENTER STO DOMIN	50.0
	DRO 142	MICROCREDIT GLOBAL PROGRAM	30.0
	DR0141	HOUSING PROGRAM	30.0
	DR0139	TECHNOLOGY UPGRADE PROGRAM	15.0
	DRO 127	MUNICIPAL GOVERNMENTS DEVELOPMENT	30.0
	DR0076	COMUNITARY DEVELOPMENT PROGRAM	40.0
	DR0151	PENSION REFORM SECTOR PROGRAM	25.0
		TOTAL A	299.0
	DRO 150	FINANCIAL SECTOR	100.0
		TOTAL B	100.0
		TOTAL 2003	399.0

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DOMINICAN REPUBLIC

STATUS OF LOANS IN EXECUTION AS FEBRUARY 28,2002

(Amounts in US$ thousands)

APPROVAL PERIOD	NUMBER OF PROJECTS	AMOUNT APPROVED	AMOUNT DISBURSED	% DISBURSED
Before 1996	4	254,000	181,315	71.38%
1996- 1997	2	93,200	23,391	25.10%
1998- 1999	7	281,660	87,466	31.05%
2000 - 2001	4	349,300	146,031	41.81%
TOTAL	17	$978,160	$438,203	44.80%

* Net of Cancellations. Excluding export financing loans.

SUPPORT FOR THE TRANSITION TO COMPETITIVE AGRICULTURE

(DR-0138)

EXECUTIVE SUMMARY

Borrower:	Dominican Republic	
Executing agency:	Ministry of Agriculture (SEA)	
Amount and source:	IDB (OC):	US$55,000,000
	Local:	US$ 6.110,000
	Total:	US$61,110,000
Financial terms and conditions:	Amortization period:	25 years
	Grace period:	4 years
	Disbursement:	4 years'
	Interest rate:	variable
	Inspection and supervision:	1%
	Credit fee:	0.75%
	Currency:	U.S. dollars from the Single Currency Facility

Objectives: The objective of the project is to enhance the efficiency of Dominican agriculture in order to make the agri-food sector more competitive and reduce poverty in rural areas. A system will be implemented to provide support for the adoption of more effective technologies than those currently in use, and the food health and safety system will be improved. To complement these activities, the operation will finance the design of commercial policy reforms and related changes required in the organization of the public agri-food sector (paragraph 2.1).

Description: The operation contains two investment components and one technical assistance component: (i) support for the adoption of technology; (ii) food health and safety; and (iii) technical assistance for commercial and institutional reform.

Component 1. Support for the adoption of technology (US$31 million). This component seeks to support the adoption of technology while improving the profile of public agri-food spending. Support

[1] The disbursement period for resources for the final audit report **on** the financial statements and the final monitoring and evaluation report will be four years and six **months.**

under the project will consist of partial cash rebates to producers to cover the cost of purchasing goods or services provided by private agents, identified in the menu of eligible options defined for the project. That menu is designed to enhance competitiveness through technologies that will reduce unit costs of production in a sustainable manner, and at the same time promote efficiency in the use of all productive resources. By favoring access for small-scale farmers to technological assets, the project's impact on productivity and incomes will help to reduce rural poverty.

Three kinds of support will be provided. Technologies that incorporate primarily public goods, especially in the form of environmental externalities, will be subsidized to 80 percent of their minimum cost. Technologies with significant elements of public goods will be subsidized to 50 percent, and those with only a few elements of public goods, where the cost of adoption consists primarily of operating expenses, will be subsidized to 35 percent.

The support provided under this component will have a specific ceiling for each technology and for each individual producer, and a total ceiling of RD$50,000 (US$3,000) for producers who adopt more than one technology during the life of the project. These ceilings will favor smaller-scale producers, who are generally the poorest ones.

Implementation of the component will begin with few technologies, in order to test the systems and procedures designed for its execution, complete the training of officials and acquire the necessary experience. Seven technologies will therefore be selected for implementation in the first year of operations. The selected technologies are: (i) ground leveling; (ii) upgrading of irrigation technology; (iii) zero or minimal tilling; (iv) use of vitroplants; (v) basic and medium-technology greenhouses; (vi) rehabilitation and conservation of pasturelands; and (vii) introduction of tree species (fruit trees, forest trees or agro-forest systems).

Component 2. Food health and safety (US$7,988,000). This component seeks solutions to the most pressing problems in the area of food health and safety, *so* as to improve the country's health situation and access for its products to international markets. The government will be strengthened in its capacity to provide public services, leaving to the private sector those areas of activity that are incumbent upon it in providing services of a private nature. The strategy to be used calls for establishing a National Food Health and Safety System and activating the National Surveillance and Monitoring Project for Food Residues and Hygiene. Activities under this component will provide institutional strengthening for the responsible SEA departments, as well as adaptation of health and

safety regulations, upgrading of laboratories and quarantine stations, personnel training, equipment purchases, increased operating capacity and coordination between the public and private institutions providing services.

Component 3. Technical assistance for commercial and institutional reform (US$6.5 million). This component will pay for consulting services and activities required to design policy and institutional reforms complementary to the policy and investment process supported by the project. The reforms will relate both to commercial policy for the sector and to the organizational structure of the public sector, and information systems in support of policymaking.

The component will include four activities, reflecting specific areas of technical assistance. These are: (i) design of a consolidated customs tariff based solely on ad valorem or specific duties, which will be gradually phased out; (ii) design of a direct compensatory support system delinked from current production; (iii) design improvements to the organization of the public agri-food regulation apparatus and the public agri-food credit system; and (iv) development of a geo-referenced survey and registry of properties and producers.

The Bank's country and sector strategy:

In 2001, the Bank performed a diagnosis of the agri-food sector, reflected in the working paper on agricultural policy, competitiveness and rural poverty, which served as the basis for preparation of this project. The operation will contribute to sustainable economic growth, through activities that, while enhancing competitiveness for the agri-food sector, will also focus on reducing rural poverty. The proposed activities are consistent with: (i) the mandate from the Eighth Replenishment to modernize and strengthen the agricultural sector (August 1994); (ii) the operational policy for rural development (OP-752, December 1994); (iii) the Bank's strategy for agricultural development, approved by the Board of Executive Directors on 12 January 2000; and (iv) the country paper submitted to the Board on 19 July 2001.

Environmental and social review:

The technologies that will be promoted under the first component of the project should help to increase productivity and reduce production costs while improving the environmental quality of rural areas. The project evaluation indicates that the environmental impacts of the technologies identified are positive, since they will help to enhance the efficiency of water use for irrigation, reduce soil erosion, improve the efficiency of chemical use and reduce water pollution, among other positive impacts. For those technologies that could have a negative impact, mitigation measures are indicated to reduce such impacts. The characteristics of the food health and safety component

suggest that it will have positive environmental impacts by increasing the government's capacity to provide food safety and phyto- and zoosanitary protection services. Previous studies indicate that the project should improve food quality and will therefore enhance health protection for domestic consumers while at the same time ensuring that export products are up to international quality standards. Furthermore, by boosting the capacity of the SEA to regulate the use of chemicals, the project will serve to improve the control, management and application of agrochemicals, and will help as well to reduce pollution of soil, water sources and products, and diminish the health risk to farm workers and consumers (paragraphs 4.11 to 4.16).

The project will have positive social impacts, since the majority of beneficiaries are poor. The setting of area-based support ceilings per technology and a cap on the maximum financing per beneficiary means that the assistance will be highly significant for small producers, and that its importance will diminish in inverse proportion to the size of properties (paragraphs 4.8 to 4.10).

Benefits: The analysis showed that six of the seven technologies proposed for 2002 generate high returns for producers who adopt them. The greenhouse option was not able to be analyzed owing to the lack of sufficient, reliable data on yields and production costs in the Dominican Republic. There is broad international experience, however, that points to this as an appealing alternative under the conditions proposed in the project. Component 3 is intended to identify concrete interventions that the government could take to enhance the efficiency of domestic markets, raise the competitiveness of rural producers, and reduce poverty. Moreover, a census registry of producers will be conducted, which will serve as an instrument for targeting support to ensure that it is delivered with maximum efficiency and that it will help to raise the sector's competitiveness and reduce poverty (paragraphs 4.6 to 4.7 and 2.32).

Risks: The principal risk to the project would be the unexpected implementation of practices to provide support for adopting technology under component 1 on the basis of discretionary criteria that favor specific beneficiaries. To minimize this risk, steps have been taken on several fronts: (i) the design of the project calls for simplified administrative procedures to reduce discretionality as far as possible in the allocation of support funds; (ii) there will be a major emphasis on publicizing the project's operating rules to ensure that information about the availability and nature of the support reaches all farmers, particularly small-scale ones; and (iii) the project's operational design makes special provision for the Producers' Registry to be used effectively, and for eligible and recipient areas to be

properly monitored. As well, the Bank's financial involvement will mean the use of strict standards of auditing and financial accountability (paragraph 4.17).

Special contractual clauses:

Special conditions precedent to the first disbursement:

(a) Establishment of the project's Management Council, Central Coordination Unit (CCU) and Technical Execution Unit (UTE) under component 2, with the necessary staffing, consistent with terms agreed in advance between the executing agency and the Bank (paragraph 3.7)

(b) entry into force of the Project Operations Manual, consistent with terms agreed in advance between the executing agency and the Bank (paragraph 3.7).

Special conditions precedent to the first disbursement of resources under component 1:

(a) that the executing agency has hired the specialized firm that will act as UTE under component 1 (paragraph 3.15).

(b) that the executing agency has signed an agreement with the Reserve Bank for channeling resources under component 1, consistent with terms agreed in advance with the Bank (paragraph 3.15).

Other contractual conditions:

(a) The loan contract will contain provisions relating to auditing, maintenance, procurement and contracting that will be applicable to all loan operations.

(b) In the event that the special conditions precedent to the first disbursement have not been met, the Bank may disburse up to the equivalent of US$400,000 to begin work under the project, provided that all the General Conditions of the loan contract have been met (paragraph 3.34).

(c) The borrower agrees to implement, during project execution, a plan to make public sector spending in the agri-food sector more efficient (paragraph 1.21).

Acknowledgement of expenditures and retroactive financing:

It is proposed that the Bank acknowledge expenditures incurred by the borrower up to US$100,000 equivalent against the financing

resources, and up to US$10,000 equivalent against the local counterpart (paragraph 2.40).

Poverty-targeting and social sector classification: This operation qualifies as a social equity enhancing project, as described in the indicative targets mandated by the Bank's Eighth Replenishment (document ***AB-*** 1704). Furthermore, this operation qualifies as a poverty-targeted investment (PTI) (see paragraphs 4.8 and 4.9). The borrowing country will be using the 10 percentage points in additional financing (see paragraph 2.38).

Exceptions to Bank policy: None.

Procurement: The contracting of works, procurement of goods and related services and the contracting of consulting services will be done in accordance with Bank policies and procedures. International competitive bidding will be required for: (i) works costing US$1 million equivalent or more; and (ii) goods and related services costing US$250,000 equivalent or more. International tenders will be called when the contracting of consulting services exceeds the equivalent of US$200,000 (paragraph 3.31).

I. FRAME OF REFERENCE

A. Socioeconomic framework

1.1 The economic performance of the Dominican Republic over the last decade has been exceptional, resulting in an average growth rate of 5.8 percent a year, more than double the average for Latin America over that period. The macroeconomic stability and structural adjustment projects undertaken during that time, together with a growing world economy, help to explain this outcome.

1.2 In contrast to this exceptional performance by the national economy, the rural portions of the country and the agricultural sector have lagged behind, and poverty levels there are still high.

1. Agriculture in the Dominican Republic

1.3 The Bank undertook a diagnosis of the agricultural sector in 2001, summarized in the working document "Agricultural Policy, Competitiveness and Rural Poverty", which has been used as the basis for preparing this operation. Agriculture is one of the most important productive sectors in the Dominican Republic. Its average growth rate over the last decade was 4.3 percent, despite which its contribution to GDP gradually declined from 13.9 percent in 1991 to 11.2 percent in 2000. The country's agricultural output is varied. There are traditional crops intended for export (sugarcane, coffee, cacao and tobacco), traditional crops intended for domestic consumption (rice, corn, garden produce, legumes) and non-traditional crops intended both for domestic consumption and export (sweet potatoes, yucca, bananas, citrus and fruits). Rice is the most important product and accounts for more than 40 percent of the gross value of agricultural output.

1.4 During the 1990s, exports of traditional products averaged US$250 million, of which sugar represented 55 percent. Green coffee and raw cacao each contributed about 20 percent, and tobacco around 5 percent. Exports of non-traditional products contributed a further US$55 million on average between 1991 and 1999, and rose to US$80 million in 2000. Of this amount, nearly US$10 million represented organic products (organic sweet bananas, of which the country is the world's largest exporter, and coffee and cacao). At the same time, imports of the principal products averaged nearly US$260 million, thus generating a small surplus.

1.5 Geographically, the most productive farming areas are found in the five major watersheds with their alluvial plains, which lie interspersed between the four mountain chains of the country: (i) the Valle del Cibao extends from the Bahia de Manzanillo in the west to the Bahia de Samana in the east, and is divided into the valleys of the Cibao Occidental (western), where rainfall is scarce, the Cibao Oriental (eastern), which is wetter and has the country's most fertile soils, and the Delta of the Rio Yuna, where drainage is poor and the soils are peaty; (ii) the Valle de Constanza is an intramontane valley of the Central Cordillera, situated 1,190

meters above mean sea level, with soils of volcanic origin that are well structured and fertile, and with lower temperatures than elsewhere in the country, allowing the cultivation of garden produce, flowers and specialty crops; (iii) the Caribbean coastal plain embraces the southeast portion of the country; (iv) the Valle de San Juan, bounded to the north by the Central Cordillera, has some of the country's most productive soils, extending for more than 100 kilometers with a width of some 20 kilometers; and (v) the Llanura (plain) of Azúa extends from the alluvial soils of the Rio Yaque del Sur in the west to the foot of the El Numero hills to the east, with low precipitation and infrequent rainfall.

2. The technological level of Dominican agriculture

1.6 The overall technological level of Dominican agriculture is low, despite a few exceptions in some sectors such as poultry raising, certain fruits and vegetables, specialty coffees and organic bananas. There are a few individual producers who use higher levels of technology. In fact, two different subsectors coexist: one that is modern or in the process of modernization, with a business structure and a market orientation, where technology is relatively advanced, and another, small-scale sector with limited entrepreneurial capacity, that tends to be concentrated in areas of fragile environment and low soil fertility.

1.7 The productive structure reveals the prevalence of small producers, in part for historical reasons (a small island with high population density) that have forced the repeated subdivision of holdings through many generations, and in part as a reflection of the agrarian reform. Properties of 100 ***tareas*** (6.3 hectares) or less account for 81 percent of farming and livestock operations, and occupy 26 percent of agricultural land. If cattle lands are excluded, these percentages rise to 90 percent of producers and 47 percent of the surface area. This fragmentation has reinforced the effect of the severe distortions in government policies that have produced a significant technological gap in the sector: despite the availability of modern production technologies in the country, these have yet to reach the bulk of producers.

TABLE I-1. FARMINGAREA, CROPS AND LIVESTOCK, 1998

Area (has)		Area (Tareas)		Producers	Hectares
From	To	From	To		
0.1	0.3	1	5	17,154	5,721
0.4	0.6	6	10	24,953	19,410
0.7	1.3	11	20	38,721	55,169
1.3	3.1	21	50	75,471	212,262
3.2	6.3	51	100	40,868	219,224
6.4	31.4	101	500	37,001	495,923
31.5	62.9	501	1.000	4,750	199,139
63.0	314.5	1,001	5.000	3,653	422,174
314.5	628.9	5,001	10.000	256	101,921
628.9		10,000		129	214,714
Total				**242,956**	**1,945,657**

Source: SEX. 1999. "Registro Nacional de Productores Agropecuarios." STPSA. SD. Tables 40.41.45. and 49. This registry does not include sugarcane plantations or producers.

1.8 Existing technological studies show that over the last 20 years the national research system has received little financial or political support from governments, and this has held back technical and scientific progress and has contributed to the growing technology gap. That gap today prevents farmers from capitalizing fully on the comparative advantages and niche markets that today's open economies afford.

1.9 Until mid-2000, the Department of Agricultural Research (DIA) of the Ministry of Agriculture (SEA) was the main government organization for agricultural research, accounting for the majority of existing capacity, but it suffered from limitations in terms of management, human capital and physical infrastructure. The number of researchers and the proportion of those with postgraduate degrees were both lower than 15 years earlier. Some of the country's traditional centers, such as the Centro Sur (CESDA) and the Centro Norte (CENDA) had virtually ceased to operate.

1.10 This situation has been analyzed and the government has begun to take steps to resolve it. The current government decided during the second half of 2000 to strengthen the National Agricultural and Forestry Research System (SINAF) in order to develop and upgrade domestic capacities in agricultural science and technology. It also implemented Law No. 289 of 1985 creating the Agricultural and Forestry Research Institute (IDIAF) as a decentralized government agency, and it created a National Agricultural and Forestry Research Council (CONIAF) to provide stimulus and direction for the system. These bodies were given the human and financial infrastructure needed to relaunch their activities.

3. The role of the public agricultural sector

1.11 The SEA is the senior body in the sector and has four sub-ministries: Administrative and Financial, Sector Planning, Production and Marketing, and Agricultural Extension and Training. This organizational structure is completed by

the Livestock Directorate. There are eight regional directorates covering the entire country. They report to the Secretary of State for Agriculture, although in their activities they interact with the various sub-ministries and with other decentralized institutions in the sector.

1.12 In addition, there are decentralized institutions reporting to the SEA. These institutions include the Banco Agrícolo, the Dominican Coffee Council, the Dominican Agrarian Institute (IAD) the Price Stabilization Institute (INESPRE) and the Institute for Development and Cooperative Credit. As noted earlier, the public sector also includes the National Agricultural and Forestry Research Council, the Dominican Agricultural and Forestry Research Institute (IDIAF), the Special Fund for Agricultural Development and the National Cotton Institute. As well, there are 14 public, unincorporated agricultural enterprises that for the most part were created to deal with specific problems and that as a whole represent a significant government involvement in the agri-business economy. Previous studies have pointed to severe distortions in the domestic marketing of farm products, and they have also revealed that the public farm credit system is used to transfer subsidies.

1.13 The government budget includes five projects for the SEA: Senior Administration, Production Development, Financing and Marketing, Rural Development, Livestock Development, and Institutional Financing. Public spending on the agriculture sector in 1999 amounted to RD$5.032 billion[1], or 10.9 percent of the national budget. Of this spending, **76** percent went to producers, 22 percent to consumers and 3 percent for environmental purposes. It is important to remember that fiscal outlays are only effective if they reach producers or consumers, and preliminary indications suggest that some State support does not reach the bulk of producers and has a negative impact on consumers. On the other hand, it must be noted that spending earmarked for the provision of public services, or for areas where government intervention can enhance productivity (research, technology transfer, market information, natural resource management) has accounted for less than 10 percent of the SEA's total budget.

1.14 The Dominican government has intervened directly in business activities for many years. In the specific case of the agriculture sector, the government is involved in the production and sale of seeds, the production of farming and livestock products, the sale of inputs and equipment, and the provision of farm mechanization services, among others. Direct state interference in the activities identified below creates market distortions and disincentives for private investment:

1.15 **Processing and sale of certified seeds.** The SEA is involved in the processing and sale of seeds through two entities of the Production Sub-Ministry: Productora de Semillas or PROSESA (seed production) and the Seeds Department, which has the

[1] Equivalent to US$3 **15** million.

Procesadora de Semillas del Sur (Southern seed processing plant). The total of subsidies by SEA to PROSESA in 1999 exceeded RD$200 per quintal of certified seeds sold, for a total of more than RD$3 million. Annual budgetary allocations to the Seeds Department between 1998 and 2000 averaged RD$129.7 million.

1.16 **Sales centers for agricultural materials (CVMA).** The CVMA is a dependency of the Sub-Ministry of Production created in August 1975 to distribute equipment, implements, materials and inputs to small and medium-scale producers. In 2001, the CVMA's budgetary allocations totaled RD$36.8 million.

1.17 **Farm Machinery Services Project (PROSEMA).** PROSEMA is a dependency of the Sub-Ministry of Production that offers farm mechanization services to small and medium-scale farmers. It has a fleet of farm machinery and implements consisting of tractors, harrows, seeders, furrow ploughs, soil aerators and combines. In 2001, PROSEMA's budgetary allocations amounted to RD$37.9 million.

1.18 **Farm and livestock products.** The SEA is also involved in the production of farm and livestock products, in competition with the private sector, although it has been gradually withdrawing from this area in the last few years. The most important projects are: (i) the Cruz de Manzanillo project, with an area of 73,165 ***tareas,*** of which 63,165 are cultivable; (ii) the National Cotton Institute (INDA), created to foster cotton production, and which has now become involved in sheep farming and sorghum; and (iii) the D-1 Livestock Industrial Project, located in the province of Azúa. Budgetary funding for these two projects amounted to approximately RD$70 million in 2000.

1.19 **Pledging [*pignoración*] project.** This project was recently introduced to replace the direct marketing of rice that the government had been doing through INESPRE. It is run by the SEA in coordination with the National Rice Commission and the Dominican Factors' Association. Under this project, the government subsidizes financial costs for buyers of rice and beans, who can purchase them at a pre-established price. For the 2000-2001 harvest spending under this project amounted to RD$148 million.

1.20 **The Dominican Agrarian Institute (IAD).** The IAD is active in reforestation, ground leveling, land preparation (surveying, clearing and plowing) and the delivery of seeds, and it has a fleet of farm machinery for this purpose. In 2000, the IAD invested RD$23.08 million in infrastructure works on lands belonging to the agrarian reform agency, and RD$6.9 million on soil conditioning and crop planting.

1.21 During implementation of the project, the SEA will eliminate some of these projects, in accordance with a plan designed to increase the efficiency of public spending on agriculture, which will include the following goals: (i) before the end of 2002, the borrower will have completely closed down the National Cotton Institute and will improve regulation of the pleding project, establishing limits of up

to 3.5 months for the period over which financial costs will be covered; (ii) before the end of 2003, the borrower will transfer to the private sector the activities currently performed by the CVMA, with the expectation that at least 25 percent of staff will be let go (i.e. not relocated within SEA); (iii) during the first quarter of 2004, the borrower will transfer to the private sector the operations currently performed by the Farm Machinery Service Project, with the expectation that at least 25 percent of staff will not be relocated within SEA; (iv) during the first semester of 2004, the borrower will have completed the privatization process of the La Cruz de Manzanillo project; and (v) during project execution, the borrower will neither establish nor carry out support programs that include any of the technologies listed in the menu of options under the present project in conditions that are more favorable to beneficiaries than hereunder. Successful implementation of this plan will improve the efficiency of public agricultural spending, while producing fiscal savings estimated initially at RD$105 million, which may well be augmented by the benefits from the change in the rice marketing mechanism (from INESPRE to the pledging project), which were estimated to have produced savings exceeding RD$40 million in 2001.

4. Commercial policy reform measures

1.22 As a result of the various existing protection mechanisms (customs tariffs, import permits and quotas on eight products) the producer subsidy equivalents (PSE)[2] are very high: in 1998 they were strongly positive for importable products (61 percent for chicken, 41.7 percent for rice) and negative for exportable products (16.1 percent for coffee and 47.7 percent for sugarcane). Existing studies show that these levels of protection are having a negative impact on the competitiveness of Dominican agriculture.

1.23 With the Bank's technical support, the government has introduced—by means of resolutions of the Secretariat of State for Agriculture issued in January 2002—the first stage of its commercial policy reform, which includes: (i) separating commercial policy (implemented through the issuance of import permits) from health policy (implemented through sanitary certificates); (ii) eliminating import permits for all agricultural, livestock and forestry products, except for the eight projects that are subject to tariff-rate quotas under agreements signed with the World Trade Organization (WTO); (iii) allocating these eight quotas proportionately among applicant importers, without excluding any individuals or groups, in accordance with Decrees **Nos.** 505-99 and 751-00, which are in force but are not yet fully applied; and (iv) basing health policy with respect to imports on lists of products for free importation, prohibited importation, and importation subject to inspection at point of origin or destination.

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[2] Ratio between total support. tariff and direct. and the price **of** the product **on** the domestic market.

1.24 With these reforms, the government hopes to facilitate import trade, eliminate superfluous procedures and ensure that the rents implied in import quotas accrue to the entire import sector and will be transferred in part to producers and marketers. The result of this first step in opening the market will be the elimination of existing discretionality, thereby fostering competition among commercial operators, which is a prerequisite for the development of markets and competitiveness in the industry. The government has already unified the exchange rate treatment of all agricultural exports (Nov. 2001). The former regime discriminated against traditional export products such as sugar, coffee, cacao and tobacco.

1.25 Under this reform system, domestic competition will be encouraged because domestic producers who compete with imported products will all have equal access to import opportunities, thanks to the elimination of permits for most products and quota rents on products subject to quantitative restrictions. Moreover, they will find it easier to obtain sanitary certification. External competitiveness will be encouraged by reducing the anti-export bias, by making the market more open, in particular by reducing non-tariff protection for importable products. Regardless of the degree of openness, external competitiveness will also be encouraged with the introduction of a customs system that will exclude duties paid on imported inputs consumed in exported goods.

B. Summary of the diagnosis and design of the operation

1.26 While macroeconomic trends[3] have had an impact on the competitiveness of output in all tradable goods sectors, the agricultural sector has lagged behind primarily for two reasons: (i) the persistence of discretionality and distortions in commercial policy, particularly in border protection (tariffs and import permits); and (ii) the haphazard and inefficient delivery of production support by the SEA and other public sector agencies. Several studies show that tariff protection and the distortions induced by commercial policy have led to: (i) an anti-export bias that is holding back the sector's competitiveness; (ii) economic rents that are appropriated essentially by a few intermediaries, with no benefit to the bulk of producers; (iii) a generalized increase in food prices that has a particularly severe impact on the poorest population; and (iv) delinkage between local markets and international markets for importable products, which has reduced the pressure of international competition as a factor encouraging technological improvements. On the other hand, fiscal spending on the sector has not helped to improve its competitiveness, because it has been targeted at: (i) food subsidies to compensate for domestic price increases caused by border protection; and (ii) providing assistance that not only competes with the private sector (mechanization services, seeds, chemicals etc.) but

[3] Rising fiscal deficits. particularly in recent years. have exerted upward pressure on interest rates and have reinforced the trend to real appreciation of the currency. originally sparked by the sharp growth in remittances from Dominicans residing abroad. and the expansion of tourism. The appreciating exchange rate and rising interest rates have reduced the sector's Competitiveness.

reaches fewer than half of the country's producers and discourages the output of public agri-food goods and services (health services and research).

1.27 Through previous studies and in dialogue with the government, weaknesses have been identified in the areas of food health and safety which are the direct responsibility of the public sector, and these tend to exacerbate competitiveness problems, reduce growth in the sector and negatively affect the welfare of domestic consumers. In particular, food health and safety problems have led to the prohibition of exports of certain products to the United States (e.g. poultry meat because of Newcastle disease, pig meat because of swine fever, and sugar, which cannot be exported in its refined farm because of alleged health problems during transport, and thus cannot be offered directly to the final consumer in the United States). At the same time, the presence of unacceptable levels of pesticide residues in plant products has caused export shipments to be rejected. These problems obviously affect domestic consumers as well.

1.28 The solution to the problems identified in the preceding paragraphs will require a complex process of reforms, which must be undertaken gradually in light of the interrelationship between the problems of rural poverty, the lack of competitiveness in the sector and the inefficiency of government action. Among other things, these reforms will have to address farm credit policies and mechanisms, technical assistance services, which will have to consider not only the transfer of technology but also training in business management for small and medium-scale producers, external trade policies and direct government support mechanisms for producers. The proposed operation, which is regarded as the beginning of this process, seeks to enhance agricultural productivity and reduce rural poverty by increasing the efficiency of public spending in the sector.

1.29 In the dialogue with the government, it has been agreed that, if fiscal spending is to increase the sector's competitiveness and reduce poverty, there will have to be changes in the mechanisms currently used ***so*** as to increase the efficiency of delivery and ensure that it reaches the great majority of producers, with preference for the small-scale producers, and the private sector will have to be involved in providing services required by farmers. To reach this objective, the project will redirect a portion of government support to cover part of the investment costs for the procurement of technological inputs with a competitiveness impact, provided by the private sector.

1.30 In order for this support to enhance domestic competitiveness, the following strategy is being adopted: (i) support will be broad in scope and will be delivered on the basis of equality of opportunity in access to technology; (ii) there will be no distortion or segmenting of the markets for goods and services, even though the support is targeted at poor farmers; and (iii) the support will not be delivered via prices for inputs incorporating the technology. Enhancing external competitiveness will require a more open market and an environment of sound and equable

economic competition among producers: this is what the first stage of commercial reforms, planned for the beginning of **2002,** is expected to generate.

1.31 Mexico has experience with a project to support the adoption of technology (Alianza para el Campo) similar to the approach of this project. A recent evaluation by the Mexican Ministry of Agriculture indicates that the project has been very successful, and has produced positive results in several areas, including the following: (i) support has generated higher levels of investment, with an average multiplier of **1.78 (1.45** as a result of compulsory counterpart investment and **0.33** as a result of additional, optional investments); (ii) more than **51** percent of producers reported higher production yields, and **56** percent of the remaining producers expect to obtain higher yields in future; (iii) approximately **25** percent of producers reported increases in production costs and a further **20** percent expect to see their costs increase in future, as a result of the increased production capacity induced by the support; (iv) **44** percent of producers reported quality improvements in their production and another **34** percent expected such improvements in future; and (v) under the crop projects, which come to maturity earlier than livestock projects, additional net income per hectare is estimated at **1.6** times the initial government investment. These results clearly depend on the specific features of the project in Mexico, and cannot be automatically translated to other countries. Nevertheless, they show that well-structured projects of this kind can have significant impacts on the income and welfare of farmers.

1.32 In light of the effects on the sector's competitiveness and the agreements the country has signed with the WTO, the project will support modernization of the government's food health and safety services. In preparation for further opening of the market, it is considered important to modernize these services and make them more efficient, in order to reduce food health risks within the country and improve the competitiveness of its exports, by achieving international recognition of the Dominican Republic's phyto-zoosanitary system on the basis of the of Agreement on the Application of Sanitary and Phytosanitary Measures (SPS), in force since **2000.**

1.33 The proposed operation will also pay for technical assistance for the design of the second stage of the commercial policy reform as part of the transition to competitiveness, to be undertaken subsequent to or separate from this project. The objective of that reform will be to replace the remaining tariff protection by direct support not linked to current output. It will require various institutional changes, reflecting the need to transform the current producer protection and consumer subsidy mechanisms.

II. THE PROJECT

A. Objectives and description

2.1 The objective of the project is to enhance the efficiency of Dominican agriculture in order to make the agri-food sector more competitive and reduce poverty in rural areas. **A** system will be implemented to provide support for the adoption of more effective technologies than those currently in use, and the food health and safety system will be improved. To complement these activities, the operation will finance the design of commercial policy reforms and related changes required in the organization of the public agri-food sector.

B. The structure of the project

2.2 The operation contains two investment components and one technical assistance component: (i) support for the adoption of technology; (ii) food health and safety; and (iii) technical assistance for commercial and institutional reform. During project preparation, technical support was provided for the first stage of commercial policy reforms intended to eliminate existing discretionality in the management of quotas, import permits and sanitary certificates. The project will help to reduce rural poverty by targeting the first component on small-scale farmers, ***so*** as to enhance their productivity and incomes.

1. Component 1. Support for the adoption of technology (US$31 million)

2.3 This component seeks to support the adoption of technology while improving the profile of public agri-food spending. Support under the project will consist in partial cash rebates to agricultural producers who are working their own farms under any of the land-tenancy arrangements acknowledged in the project's operations manual, to cover the cost of purchasing goods or services provided by private agents, identified in the menu of eligible options defined for the project. That menu is designed to enhance competitiveness through technologies that will reduce unit costs of production in a sustainable manner, and at the same time promote efficiency in the use of all productive resources. By favoring access for small-scale farmers to technological assets, the project's impact on productivity and incomes will help to reduce rural poverty.

2.4 Support under this component will consist of a single cash payment per hectare or per unit of investment, estimated as a percentage of the lowest investment required for adoption of the technology in question. Those payments will be made after verifying that the technology is consistent with the project's technology menu, and that the farmer has effectively adopted it. For these purposes, investment is understood to mean outlays in cash, kind or labor that the producer must make to adopt the technology, as well as any initial production losses resulting from that

adoption. Operational details of the component are provided in the following chapter.

2.5 Three kinds of support will be provided. Technologies that generate highly significant environmental externalities will be subsidized to 80 percent of their minimum cost. Technologies with important externalities will be subsidized to 50 percent, and those with only a few externalities, or where the cost of adoption consists primarily of operating expenses, will be subsidized to 35 percent.

2.6 The support provided under this component will have a specific ceiling, in terms of area and amount, for each technology and for each individual producer, and a total ceiling of RD$50,000 (US$3,000) for producers who adopt more than one technology during the life of the project. These ceilings may be adjusted by mutual agreement between the borrower and the Bank on the basis of an analysis of the results achieved from the monitoring plan described in paragraph 3.38. These ceilings will favor smaller-scale producers, who are generally the poorest ones. The maximum area is **50** ***tareas*** (3.15 hectares) for most of the technologies included in the initial menu, and 100 ***tareas*** (6.3 hectares) for those that are easily adopted and have low unit costs, such as zero tilling. The ceiling was set in an ad hoc manner for other technologies, such as greenhouses (a unit of 2000 square meters, equivalent to 3 ***tareas),*** improvement to pasture lands (400 ***tareas)*** and technical upgrading of irrigation (30 ***tareas).***

2.7 In addition to the general criteria listed in paragraphs 1.29 and 1.30, the following specific criteria for selecting technologies have been worked out with the **SEA:**

a. Technologies eligible for support under this component **must be discrete** in nature and noncontinuous, meaning that they are generally adopted in relation to a specific event and that they can be readily verified by inspection personnel with an average level of qualifications. This excludes technologies that affect variables in a continuous way, such as changes in the density, distance or depth of seeding, or changes in the dosage of pesticides and other chemicals, as well as those that involve improved technological management of production, such as integrated pest control.

b. Technologies must be directly **related to the primary production** of plants, trees or livestock, **or immediate post-harvest handling on the farm.** This excludes technologies for preparation, processing or conservation and other post-harvest activities conducted off-farm.

c. The criteria **exclude** techniques, equipment and capital goods **of a generic type,** such as the purchase of farm machinery, but not those of a specific type, such as pressurized or localized irrigation equipment.

d. The technologies selected **must not have any significant negative environmental or social impact** or, if they do, they must include cost-effective and efficient mitigation measures.

2.8 Implementation of the component must obviously begin with just a few technologies, in order to test the systems and procedures designed for its execution, complete the training of officials and acquire the necessary experience. Seven technologies were therefore selected from the seventeen technologies identified, for implementation in the first year of operations. These seven technologies were selected on the basis of the following criteria: (i) simplicity of definition and application; (ii) speed of application and immediate results; (iii) scope of impact; (iv) scope of coverage in terms of geographic area, types of producers and productive subsectors; (v) adequate availability of private suppliers with sufficient capacity; and (vi) currently existing demand.

2.9 The selected technologies are: (i) ground leveling; (ii) technical upgrading of irrigation; (iii) zero or minimal tilling; (iv) use of vitroplants; (v) basic and medium-technology greenhouses; (vi) rehabilitation and conservation of pasturelands; and (vii) introduction of tree species (fruit trees, forest trees or agro-forest systems). This menu may be modified beginning in the second year, on the basis of economic and environmental assessments of the technologies proposed for addition, and with the approval of the Bank. Any technologies to be included must meet the same selection criteria as those described in paragraphs 1.30 and 2.7. Annex VIII, contained in the technical files on the project, presents the technologies identified that will not be part of the initial menu, indicating the suggested levels of support that could be used to broaden the menu in future years.

2.10 For each technology selected, a detailed description has been prepared and presented in Annex II, which also includes means of verification for use in each type of technology. The Project Operating Manual also includes manuals, forms and specifications for administering the process of application, verification and payment of support and basic characteristics of the training that will be given to SEA officials responsible for the component.

2.11 Table II-1 shows reference costs per tarea, estimated demand for the first year, the percentage of support and the maximum amounts payable to producers for each of the seven technologies proposed for the first year of the project.

TABLE II-1. FEATURES OF SUPPORT

Technology	Cost/Tarea RD$	Percentage of Support	Support/ Tarea RD$/Tarea	Max N° of Tareas	Max/Producer RD$	Max/Producer US$	Demand /Yr Ha/yr	Notes
1. Ground leveling	450	80	360	50	18.000	1.080	2000⇨4000	
2. Irrigation technology	3.120	50	1.560	30	36.800	2.800	500⇨800	30% pressurized 30% aspersion. 40% surface
3. Zero tilling	300	50	150	100	15.000	900	5000⇨9400	Repeatable for 3 yrs
4. Vitroplants	2.800	35	980	50	49.000	2.950	630⇨1260	Once only per producer
5. Greenhouses	17.000	50	8.500	3	25.000	1.535	50U⇨200U	Wooden. once only per producer
6. Pasture restoration	200	50	100	400	40.000	2.400	630⇨3000	Rehahilitation or consenation
7. Introduction of tree species	900	80	720	50	36.000	2.170	630⇨1500	Fruit or forest trees: once only per producer
Total ceiling per producer	Not applicahle	Not applicahle		Not applicahle	50.000	3.000	Not applicable	Maximum support payable to any producer under the project is US$3.000

2. Component 2. Food health and safety (US$7,988,000)

2.12 This component seeks solutions to the most pressing problems in the area of food health and safety, *so* as to improve the country's health situation and access for its products to international markets. The government will be strengthened in its capacity to provide public services, leaving to the private sector those areas of activity that are incumbent upon it in providing services to ensure that the country's agricultural and agro-industrial output can meet the requirements and standards of international trade and public health. The strategy to be used calls for establishing a National Food Health and Safety System and activating the National Surveillance and Monitoring Project for Food Residues and Hygiene. Activities under this component will provide institutional strengthening for the responsible SEA departments, as well as adaptation of health and safety regulations, upgrading of laboratories and quarantine stations, personnel training, equipment purchases, increased operating capacity and coordination between the public and private institutions providing services.

2.13 The component will have four subcomponents, which include financing investments to strengthen prevention, surveillance and control of diseases and pests, analysis of residues and food hygiene, analytic and diagnostic capacity, inspection and quarantine.

2.14 **Food safety subcomponent (US$2,137,000).** This subcomponent is intended to strengthen the supply of safe food (fresh and processed) for domestic consumption and for export. The project will finance: (i) technical assistance for creation of a Technical Committee on Food Sciences (COTECA) within the National Commission for the Codex Alimentarius (CONCA); (ii) capacity building for the SEA; (iii) creation of a National Network of Sanitary and Agri-food Laboratories and equipping of the Central Veterinary Laboratory (LAVECEN); and (iv) training in best practices for SEA extension workers.

2.15 *Creation of the Technical Committee on Food Sciences (COTECA).* This will be created as an honorary body, interinstitutional and multisectoral, to provide advice to the government in the preparation and adoption of food standards, based on risk analysis. The project will pay for a consultant to provide technical assistance in organizing the COTECA and defining its functions.

2.16 *Capacity building for the SEA.* In order for the food health and safety services of the SEA to meet phyto- and zoosanitary standards required by the international and domestic markets, the following activities will be financed: (i) international technical assistance, personnel training, and purchase of equipment needed to implement a Quality Management System within the SEA; (ii) technical assistance, personnel training and purchase of equipment necessary to create the Department of Agricultural Research (DIA) and its regulatory framework; (iii) international technical assistance, personnel training and purchase of equipment for the creation of the Health Legislation Unit (ULS) for preparing the SEA Compendium of Sanitary Standards; (iv) creation and implementation of the National Project for Surveillance and Monitoring of Food Residues and Hygiene and a Modernization and Preventive Control Project to ensure the proper use of agricultural chemicals, veterinary products and drugs, through technical assistance; and (v) national and international instructors to train officials of the Departments of Plant Health (DSV), Animal Health (DSA) and Agricultuaral Research (DIA), and personnel of IDIAF, DIGESA-SESPAS and the Dominican Agribusiness Board (JAD), and the respective departments of the SEA.

2.17 *National Network of Health and Agri-food Laboratories.* Funding will be provided to set up a National Network of Laboratories based on existing laboratories, in order to decentralize activities that can be delegated to the private sector, guarantee the quality of services, as well as carry out the project for monitoring, surveillance and control of residues and food hygiene, the National Pest and Disease Diagnosis Project and the Veterinary Diagnosis Project. Funding will be provided for: (i) modifications to LAVECEN's infrastructure and the four regional laboratories; (ii) purchase of equipment for reference laboratories (LAVECEN and the AILA post-entry lab); (iii) technical assistance and purchase of equipment needed to create the Quality Control Unit and the Accreditation Unit within the LAVECEN; (iv) technical assistance for designing and implementing a sustainable system of providing services in LAVECEN and in the Post-Entry Lab, by updating the fees

structure in accordance with actual costs; and (v) training for the staff of these laboratories, through national and international courses.

2.18 *Training for farmers*. The project will pay for training for 40 extension workers of the SEA, who in turn, and as part of their functions, will give instructions to farmers on best practices. Priority will be given to producers of products that have a high impact on food safety (by volume of production or risk factor), and with the potential for export. Training will then be provided to commercial producers of beef and pork, poultry producers, beekeepers, market gardeners and fruit growers. The project will also pay for teaching materials for the training courses, seminars and fairs.

2.19 **Animal health subcomponent (US$2,556,000).** This subcomponent is intended to safeguard the country's livestock herds and guarantee the health status of animals and their products. It will finance specific activities to achieve this objective, through: (i) training for DSA personnel and the necessary equipment to establish an Epidemiological Surveillance System; (ii) personnel training and equipment for the Registry Division for Veterinary Products and Establishments; (iii) training for staff reassigned to the Irrigation Analysis and Management Division and the Professional Accreditation and Information Division to be created within the DSA, and purchase of equipment; and (iv) reinforcing the specific projects for the eradication of swine fever and Newcastle disease through the purchase of field and office equipment, vehicles and spare parts, and the necessary inputs for the eradication campaigns.

2.20 **Plant health subcomponent (US$1,570,000).** This subcomponent will finance activities to safeguard the phytosanitary situation, improve diagnostic capacities, strengthen the disease and pest control projects, and provide services to facilitate the flow of import and export trade. The project will pay for: (i) training of the personnel to be transferred to the Irrigation Analysis and Management Division, to be created within the DSV, and equipment for the Division; (ii) technical assistance, equipment and staff training for the DSV as required to establish the system of phytosanitary surveillance and notification; (iii) training, through national and international courses, for personnel of the operating divisions of the DSV; and (iv) equipment for selected diagnostic laboratories (4 belonging to IDIAF and the Marine Laboratory at Puerto Plata).

2.21 **Animal and plant quarantine subcomponent (US$1,725,000).** This subcomponent will finance efforts to reduce the incidence of exotic health problems and the spread of those already established in the country. It will pay for: (i) upgrading and equipment for the Animal Quarantine Station and the Plant Quarantine Station; (ii) rehabilitation of border control posts (at Jimani, Elias Piña, Dejabon) and construction of a border control post at Pedernales; (iii) equipment for inspection and control posts at 8 airports, 9 seaports and 4 border posts;

(iv) extension of the quarantine information and communication network; and (v) training for inspection and survey staff in the DSA and the DSV.

2.22 Activities under this component will require coordination between the Risk Analysis and Management Divisions of the DSA and the DSV, the Epidemiological Surveillance Divisions, the Registry of Veterinary Products and Establishments, the Registry of pesticides, fertilizers and agricultural establishments, the reference laboratories and the regional and diagnostic laboratories, and the National Project for Pest and Disease Diagnosis of the DSV.

3. Component 3. Technical assistance for commercial and institutional reform (US$6,500,000)

2.23 This component will pay for consulting services and activities required to design policy and institutional reforms complementary to the policy and investment process supported by the project. The reforms will relate both to commercial policy for the sector and to the organizational structure of the public agri-food sector, and information systems in support of policymaking.

2.24 The component will include four activities, reflecting specific areas of technical assistance. These are: (i) design of a consolidated customs tariff based solely on ad valorem or specific duties, which will be gradually phased out; (ii) design of a direct compensatory support system that is delinked from current production; (iii) design improvements to the organization of the public food regulation apparatus and the public farm credit system; and (iv) development of a geo-referenced survey of properties and producers.

2.25 Policy design work will involve the following steps: (i) formation of interinstitutional working groups and development of final versions of the terms of reference for the consultants; (ii) initial statement of the problem; (iii) survey of other institutions for their opinions and interest in participating in the development of policy options; (iv) preparation of policy drafts; (v) dialogue with institutions and interest groups in the private sector and civil society; and (vi) drafting of the final version of the proposed policies for consideration by the government: Ministries of State and Economic Cabinet.

2.26 *Customs **tariff consolidation and gradual dismantling.*** The objective is to design a tariff system consistent with the goal of enhancing national competitiveness. This proposal may include ordinary tariffs lower than 40 percent ad valorem, the current level for most of the country's products, certain specific tariff items denominated in pesos per unit, and supplementary customs regimes to ensure international competitiveness even with tariffs. However, the proposal must not include tariff-rate quotas, since these constitute a major barrier to competitiveness. The proposed consolidation must take into account the relative levels of support to

producers in developed countries, which are the principal trading partners of the Dominican Republic.

2.27 *Design of a project for compensatory support delinked from current output.* The objective is to develop a mechanism of income support for farmers, as compensation for the reduction of the protection inherent in existing trade barriers. Increasing the international competitiveness of the farm sector and reducing rural poverty will require these barriers to be gradually dismantled. The objective of the support will be to maintain living standards for farmers without undermining their competitiveness, which will be achieved with direct support to the producer in forms that cause the least distortion to trade or production. Support will be paid for by the treasury and not by consumers, and will be financed in large part from the redirecting of components in the government's agriculture budget.

2.28 Direct, production-delinked support must meet the following five additional criteria: (i) eligibility for such payments will be determined in light of clear objectives and criteria, such as income, status as a producer or landowner, use of productive factors or level of output over a defined base period; (ii) the amount of support in any year will not be related to or based on the type or volume of a farmer's production (including the number of animals) in any year after the base period; (iii) the amount of these payments in any year will not be based on or related to domestic or international prices for products in any year after the base period; (iv) the amount of support in any year will not be related to or based on the factors of production employed in any year after the base period; and (v) eligibility for payment will not require any production.

2.29 *Design for reorganizing the public agri-food apparatus and managing its finances.* The objective is to prepare a proposal for reorganizing the public agricultural sector, based on redirecting support to producers via non-distorting instruments that will promote competitiveness. In implementing these proposals, the **SEA** and its various agencies will need to change the way they go about serving farmers, *so* as to reach more producers more efficiently and with more effective support.

2.30 Transformation of the **SEA,** in particular, will involve reforms in the administration of commerce, lessons learned in the delivery of investment support under component 1 of this operation, strengthening health services under component **2,** and the design of a new customs tariff consolidation and direct supports under component **3.** The role and activities of the **SEA** and its agencies will be examined in light of the reformulated support policies and, on the basis of those policies, the required reforms will be identified.

2.31 The restructuring process will require the elimination of agencies, concentration of units, redefinition of the way services are provided, implementation of retraining and voluntary staff retirement incentives. **As** a counterpart, the resulting functions and structure will have to be strengthened, particularly in terms of technical

capacities for the functions of management, strategic orientation, evaluation of sector policies and provision of public goods.

2.32 This component will also finance activities to develop a geo-referenced survey and registry of properties and producers. The registry must make it possible to identify each farmer with a specific piece of land, key information to facilitate management of the technology adoption support project and the delinked support projects that are expected to be introduced in the future. The properties registry will start with data from the National Registry of Agricultural Producers and the results of the Irrigation Users Survey for the project DR-0035 now underway, for Improvement and Management of Irrigation Systems by Users (PROMASIR).

C. Project cost

2.33 The total cost of the project is estimated at US$61,110,000, which will be distributed by source of financing and by category of investment in accordance with the following table.

TABLE II-2. TABLE OF COSTS
(US$000)

	IDB	LOCAL	TOTAL	%
I. ADMINISTRATION & SUPERVISION	**5,500**	**550**	**6,050**	**9.90%**
CCU	900	450	1,350	2.21%
Technical unit	2,800	100	2,900	4.75%
• Component 1 contract	2,400		2,400	
• UTE component 2	400	100	500	
Information system	1,200		1,200	1.96%
Monitoring & supervision	400		400	0.65%
Financial audit	200		200	0.33%
II. DIRECT COSTS	**40,739**	**4,749**	**45,488**	**74.44%**
Component 1	**28,000**	**3,000**	**31,000**	**50.73%**
Component 2	**6,239**	**1,749**	**7,988**	13.07%
Food safety	1,307	830	2,137	
Animal health	1,902	654	2,556	
Plant health	1,430	140	1,570	
Quarantine	1,600	125	1,725	
Component 3	**6,500**	**0**	**6,500**	**10.64%**
Foreign trade	300		300	
Delinked support	300		300	
Institutional reform	400		400	
Properties registry	5,500		5,500	
III. NO SPECIFIC ALLOCATION	**1,700**	**111**	**1,811**	**2.96%**
Contingencies	1,700	111	1,811	
IV. FINANCING COSTS	**7,061**	**700**	**7,761**	**12.70%**
Interest	6,511		6,511	
Commitment fee	0	700	700	
Inspection & supervision	550		550	
TOTAL	**55,000**	**6,110**	**61,110**	
Percentage	90.00%	10.00%		

1. Administration and supervision (US$6,050,000)

2.34 This category represents 9.9 percent of the total project cost. It includes financing for personnel (technical and administrative/financial) for the CCU and the UTE, as well as funding to develop and implement the information system for the project, and money to pay for consulting services for monitoring and supervision and financial auditing of the operation.

2. Direct costs (US$45,480,000)

2.35 This category represents 74.44 percent of total project costs, and includes the following headings: (i) payment of support for technology adoption under component 1 of the project; (ii) purchase of equipment, hiring of consultants and training projects for the components on food safety, animal health, plant health and quarantine, under component 2 of the project; and (iii) the four consulting contracts under component 3 of the project.

3. No specific allocation (US$1,811,000)

2.36 This category represents 2.96 percent of total project costs, and covers funds for possible cost increases through contingencies and cost escalation. Contingencies have been estimated at 9 percent of direct costs and administration and supervision costs, except for the cost of component 1, where the funds will be used until the allocated amount is exhausted (it is expected that this component will provide support to about 15,000 farmers).

4. Financing costs (US$7,761,000)

2.37 This category, representing 12.7 percent of total project costs, includes interest during execution, the commitment fee and inspection and supervision costs to the Bank.

D. Project financing

2.38 The Bank will contribute approximately 90 percent of the total cost, in the equivalent of US$55 million from the Ordinary Capital, to be disbursed in foreign currency in accordance with Bank policies. The local counterpart will consist of US$6.11 million, to be drawn from the government's general budget. The Bank's financing has been increased to 90 percent because this operation qualifies as a poverty-targeted investment.

2.39 The Bank loan will have the following characteristics: (i) interest rate variable; (ii) credit fee 0.75 percent on the undisbursed balance of the loan; (iii) inspection and supervision expenses of 1 percent of the total loan amount; (iv) grace period of four years; and (v) amortization period of 25 years.

E. Acknowledgement of expenditures and retroactive financing

2.40 With the Bank's authorization, up to US$100,000 equivalent of the financing resources and up to US$10,000 equivalent of the local counterpart could be used to reimburse expenditures incurred or finance those incurred under the project, provided that they were incurred after 1 March 2002 and prior to approval of the financing by the Bank and provided that requirements substantially similar to those stipulated in the loan contract are complied with.

III. PROJECT EXECUTION

A. Borrower and executing agency

3.1 The borrower and guarantor will be the Dominican Republic, which will transfer resources from the project on a nonreimbursable basis to the Ministry of Agriculture (SEA), which will serve as the executing agency, using the system described in this chapter. The SEA will involve in the project three of the five sub-ministries included in its corporate structure: the Technical Sub-Ministry for Agricultural Planning; the Livestock Directorate; and the Agricultural Extension and Training Sub-Ministry.

1. Objectives and functions of the SEA

3.2 The Ministry of Agriculture is an integral component of the central government, and is the senior body in the country's agricultural sector. It was created in **1965** by Organic Law **4,378** and its general functions were established by Law **8** of that year. That legislation spells out the general functions of the SEA as follows: (i) formulation and direction of agricultural policy, consistent with the general development plan; (ii) fostering agricultural production, through research and the transfer of agricultural technologies; (iii) prevention and control of animal and plant pests and diseases; (iv) preservation and regulation of renewable natural resources; and (v) rationalizing the use of lands, waters and forests.

2. Corporate structure of the SEA

3.3 The corporate structure of the SEA is detailed in Annex VII, found on the technical files of the project. The structure is a result of a series of changes over the last few years, intended to adapt it to the sector's new circumstances. The current government is committed to pursuing institutional and operational reforms in the SEA, in order to adapt its functions and its purpose, reduce its staffing levels and make more effective the support services that it provides to the country's farmers, through a gradual process of transferring the provision of these basic services to the private sector, in a manner consistent with the process of opening the economy and its agricultural markets.

3. Project execution structure

3.4 In order to execute this project, a special structure is planned within the SEA, as shown in the Project Execution Organization Chart contained in Annex VI, which is found on the technical files of the project.

3.5 The design and characteristics of the proposed structure respond essentially to the institutional and operational weaknesses identified in the analysis that was

performed during project preparation, and the need to ensure that project funds are managed in accordance with operational, control and supervision structures and procedures that are governed by the principles of universality, nondiscretionality, impartiality, certainty, transparency and timeliness.

3.6 The organizational structure will consist of four basic elements: (i) the Project Management Council; (ii) the Central Coordination Unit (CCU); (iii) **2** Technical Execution Units (UTE), one of which will be a specialized firm hired to implement component 1; and (iv) a Financial Entity for Channeling Funds (EFCR). Functional control over the structures will be exerted through: (i) annual external audits of the project's financial accounts, by a firm of independent public accountants; and (ii) a concurrent system of monitoring, control and supervision over operational management, to be performed by a specialized firm. Fees and other expenses for the services of both firms will be paid as a charge to the loan. The project's operational management will use criteria, standards, forms and technical, administrative and accounting procedures contained in the Project Operating Annual, to be approved and implemented by the Management Council.

3.7 ***As a condition precedent to the first disbursement,*** **the borrower will present evidence of:** (i) establishment of the project's Management Council, Central Coordination Unit (CCU) and the Technical Execution Units (UTE), with the necessary staffing, consistent with terms agreed in advance between the executing agency and the Bank; and (ii) entry into force of the Project Operations Manual, consistent with terms agreed in advance between the executing agency and the Bank.

3.8 Following is a brief description of the major elements of the corporate structure:

a. Project Management Council

3.9 This will be responsible for managing, coordinating and supervising general execution of the project. It will be chaired by the Secretary of State for Agriculture and will include **3** Undersecretaries of the SEA and **3** representatives of the private sector (the Dominican Agri-food Board [JAD], the Superior Institute for Agriculture and the farmers association designated by the SEA). The general coordinator of the CCU will serve as Secretary of the Council, with voice but without vote. The Council will meet normally at least six times a year, and will hold special sessions when convened by the chair. The basic functions of the Council, which will be contained in the Operations Manual, will be the following: (i) to appoint the General Coordinator and the three deputy coordinators of the CCU, selected from among candidates invited to enter a public competition held for this purpose, with the Bank's concurrence; (ii) to examine and approve each of the procurement contracts for goods and services to be financed by the project, and to authorize the General Coordinator to sign those contracts; (iii) to examine and approve the audited annual financial statements for the project, prepared by an

independent firm of public accountants, and the reports of the firm that will do the monitoring, control and supervision; (iv) to examine and approve the Annual Operating Plans (AOP) for each of the sub-projects or components of the project, which will be submitted for consideration by the General Coordinator of the CCU; and (v) to make recommendations with respect to the progress of the project.

b. Central Coordination Unit (CCU)

3.10 This unit will be the key institutional structure for coordination and execution of the project, and will be endowed with the executive, administrative and service personnel indicated in Annex IX, on the project technical files. During execution this unit will interact directly with the various sub-ministries of the SEA performing technical tasks under each of the components. The unit will report directly to the Project Management Council. The budget for its personnel, equipment, functioning and other expenses, detailed in Annex IX on the project files, will be covered with project funds throughout the execution period.

3.11 The CCU will be responsible for the following functions in connection with project execution: (i) to coordinate project execution in order to ensure the coherent and harmonious execution of its various components; (ii) to provide operational support to the sub-ministries of the SEA, and to the UTEs in executing components 1 and 2; (iii) direct responsibility for execution of component 3; (iv) to install and operate an information system that will be connected online with the SEA, UTEs and the Financial Unit for Channeling Resources, and which will be used to monitor progress and goals under each component; (v) to keep accounts for the project, on a consolidated basis and by subcomponent, using the respective catalog of accounts approved by the Bank; (vi) to prepare for consideration by the Project Management Council an annual forecast of activities, as well as the corresponding progress reports; (vii) to supervise and approve the process of bidding and awarding of contracts for the purchase of goods and services to be financed with project funds; (viii) to give final approval to training and information plans financed by the project; (ix) to prepare commitment and disbursement schedules and to provide an accounting for the annual budget; (x) to supervise the functioning of the UTEs and ensure that they comply with the regulations and conditions contained in the Operations Manual and in the EFCR Contract; (xi) to provide the Management Council with the appropriate reports on financial auditing, monitoring, evaluation and supervision of the project prepared by the firms contracted for this purpose; and (xii) to select and contract firms to do the financial auditing and project monitoring and supervision.

c. Two Technical Execution Units (UTEs)

3.12 The Technical Execution Units will have basic operating responsibility for the Technology Adoption Support Component and the Food Health and Safety Component. The UTE for component 1 will be a private firm hired for this purpose.

It will need to establish offices in the 8 regional planning units set up in the SEA's regional directorates throughout the country. These 8 regional offices will be responsible for technical and operational coordination of the SEA area agents selected to participate in the project, and it may establish incentives, recognized in the payment scheme for the firm, to ensure their effective participation in the project. The area agents, SEA officials located in each of the country's municipalities, will be the contact point with farmers eligible under component 1. The UTE responsible for the Food Health and Safety Component will be located in the SEA Sub-Ministry for Research and Extension and will have specialized staff in the three technical areas of the component. In Annex IV, on the project technical files, there is a detailed budget for contracting the UTE responsible for component 1, and the additional personnel and costs of the UTE responsible for component **2.**

d. Financial Entity for Channeling Resources (EFCR) – BANRESERVAS

3.13 This body will be responsible for managing project funds, both those from the Bank loan and the counterpart contribution from the borrower. Technical aspects will have to be separated from strictly financial aspects in executing the project. According to the country's legislation, the Reserve Bank of the Dominican Republic (BANRESERVAS), a financial entity owned 100 percent by the government, has the exclusive power to receive deposits from state institutions. For channeling project funds, it is planned that the SEA, through the CCU, will sign an agreement with BANRESERVAS whereby the latter will be responsible for channeling project funds, in particular those for component 1. Any costs resulting from the service will be covered by the SEA as a charge to its annual budget.

3.14 BANRESERVAS will coordinate with the CCU in paying farmers for the support vouchers granted under component 1, through its branches, agencies and service centers.

3.15 The transactions conducted by BANRESERVAS in executing the project will be recorded and monitored in an information system to be purchased as a charge to the project. **As a condition precedent to the first disbursement of component 1 resources, the borrower will present to the Bank's satisfaction evidence that the services for channeling the component's funds have been agreed with BANRESERVAS, in an agreement signed with the SEA and that the specialized firm has been hired that will act as UTE for this component.**

e. Personnel and equipment of the CCU

3.16 A General Coordinator will be appointed to head the Central Coordination Unit (CCU) on a full-time basis for 48 months, as a charge to the project. This person will be the most senior official responsible for the project's technical and administrative management, and will be appointed by the Project Management

Council on the basis of a public competition conducted with the Bank's concurrence. The person appointed must be a professional with broad expertise and technical and managerial experience of more than 15 years in the sector, and with professional training that includes postgraduate studies at a recognized institution in agriculture or business administration.

3.17 Under the General Coordinator there will be three sectoral sub-coordinators, who will also be appointed on the basis of a public competition held with the Bank's concurrence: (i) a technical sub-coordinator to manage technical and operational activities under components 1 and 3; (ii) a technical sub-coordinator for managing technical and operational activities under component 2; and (iii) an administrative/financial sub-coordinator to manage administrative and financial activities, in close cooperation with the financial institution channeling the funds. These three sub-coordinators must be professionals, with at least ten years experience in the sector, and must have broad experience and professional training in areas relevant to the project.

3.18 The CCU will have the necessary administrative personnel and facilities, which will include the design and installation of an interconnected management information system for recording, operation, control and monitoring of project activities. The basic features of the system have been defined and are found in the project technical files.

4. Annual Operating Plan (AOP)

3.19 Project execution will be backed up by Annual Operating Plans (AOP), which will be prepared by the CCU together with the UTE. The AOPs will contain a listing of all activities to be carried out each year under the project, including schedules for: (i) support to farmers for technology adoption; (ii) bidding; (iii) contracting of consultant firms or specialized institutions; (iv) works contracting; (v) purchases of machinery, equipment and other eligible goods; (vi) training and professional upgrading plans; (vii) promotional and information events for farmers; and (viii) other activities that are considered important.

3.20 During each year of the project, and prior to October 31, the borrower, through the SEA, will present to the Bank the AOP for the following year. The AOPs will serve as the basis for the Bank to determine, in consul tation with the borrower, whether any adjustments are required during project execution. The Bank will send annual evaluation missions, the first of which will take place 12 months after execution begins.

B. Execution of the components

1. Component 1. Support for technology adoption

3.21 Annex V, on the project technical files, contains a flowchart detailing the steps required to deliver support for the adoption of technology. Eligible private suppliers will be previously certified by the CCU, using the procedures indicated in the Operating Manual.

3.22 The delivery process may be summarized as follows: the applicant farmer, once approval from the area agent has been received and the application has been processed and authorized by the CCU, will receive from the UTE a Reserve Bank voucher that can be used to contract a private provider, execution of works and services or purchase of inputs necessary for adopting the technologies contained in the menu of options found in the Operating Manual. Once the contracted good or service has been provided, certified by the specialized firm that will act as UTE for this component and accepted in writing by the beneficiary, the supplier will present the voucher to the local branch or agency of BANRESERVAS. BANRESERVAS will verify UTE and CCU approval by way of the interconnected management information system, and make the corresponding payment.

3.23 Beneficiaries under this component will be farmers legally exploiting their lands, and they will be subject to the ceilings imposed for each technology and for each producer. The UTE and the CCU will be responsible for maintaining up-to-date information on implementation of the component.

2. Component 2. Food health and safety

3.24 This component will be executed by a UTE within the Sub-Ministry of Research and Extension with operational coordination by the CCU and technical supervision by the Department of Agricultural Research (DIA), the DSA, the DSV and the DIGEGA. It is essential to ensure a standard approach to the decision-making process on food health and safety among the different agencies responsible for improving sanitary standards. The COTECA will create a Department of Agricultural Research (DIA), the main function of which will be to serve as a permanent coordination point between the SEA and the SESPAS-DIGESA, the SEMARENA and the SEIC.

3.25 To meet the objectives of the component, the SEA will also be contractually obligated to create the Technical Committee on Food Sciences (COTECA), with the specific functions of providing advice and evaluating the compliance of specific projects for controlling food health and safety. This Commission will consist of representatives of the SEA-DIA, the SESPAS-DIGESA, the INDOTEC, the SEMARENA, the IDIAF, the JAD, and the universities and technical schools.

3.26 The UTE for this component will be responsible for preparing the terms of reference for the consultants and the bidding documents for the procurement of goods and construction/rehabilitation of physical works, and for providing technical supervision of those works. All contracting will be done by the CCU, in coordination with the UTE, and the respective payments for those goods and services will be made on the basis of documentation provided by the UTE to the CCU.

3. Component 3. Technical assistance for commercial and institutional reform

3.27 This component will be carried out by CCU staff, with technical support from the respective levels of the SEA. It will involve essentially the procurement of goods and consulting services as described in Chapter 11.

3.28 The policy documents will be prepared through the use of consultants and interinstitutional working groups, the composition of which will vary depending on the policy topic, but which must typically include technical personnel from the Sub-Ministry of Technical Planning of the SEA, other planning, monitoring and evaluation units of the ministry, other ministries or governmental bodies, and the private sector.

3.29 In order to reinforce analytical and policymaking capacities this component will finance a series of seminars, national and international, for members of the interinstitutional working groups, including representatives of the private sector and civil society. As well, funds are included for information workshops on the documents prepared, and for conducting consultations.

3.30 Preparation of the proposal for customs tariff consolidation and the project of direct supports will be done by a consulting firm. Preparation of the geo- referenced registry of properties and producers will be done by an international consulting firm, which will work with national experts from the SEA on all aspects involved in preparing this registry. The consulting firm will also provide training for domestic staff in the administration, updating and maintenance of this registry.

C. Procurement of goods

3.31 The contracting of works, procurement of goods and related services and the contracting of consulting services will be done in accordance with Bank policies and procedures. International competitive bidding will be required for: (i) works costing US$1 million equivalent or more; and (ii) goods and related services costing US$250,000 equivalent or more. International calls for proposals will be issued when the contracting of consulting services exceeds the equivalent of US$200,000.

D. Contracting of consultants

3.32 For consulting contracts to be financed by the project, the standard procedures contained in Annex C of the loan contract will be used. The schedule and packages of contracts for goods and services included in the respective components and subcomponents have been defined on the basis of recommendations by consultants contracted for preparation of the project.

E. Disbursement schedule

3.33 The following table shows the estimated disbursement schedule for the four years of program execution, consistent with the investment calendar for each of the components and subcomponents. Annex III presents the procurement schedule.

TABLE III-1. DISBURSEMENT SCHEDULE

	Year 1	Year 2	Year 3	Year 4	TOTAL
IDB	**9,200**	**12,890**	**15,280**	**17,630**	**55,000**
• Administration	1.850	1.250	1.200	1.200	**5,500**
• Component 1	3.000	7.000	8.000	10.000	**28,000**
• Component 2	1.480	1.550	1.500	1.709	**6,239**
• Component 3	2.000	2.000	2.500		**6,500**
• Other uses	870	1.090	2.080	4.72 1	**8,761**
LOCAL	**1,095**	**1,435**	**1,485**	**2,095**	**6,110**
Total	**10,295**	**14,325**	**16,765**	**19,725**	**61,110**
%	16.85%	23.44%	27.43%	32.28%	100%

1. Revolving fund

3.34 It is recommended that a revolving fund be established for an amount equal to 5 percent of the loan. This amount may be revised by the parties, after the first year of project execution, if a review shows an adjustment to be necessary. **In the event that the special conditions precedent to the first disbursement have not been met, the Bank may disburse up to the equivalent of US$400,000 to begin work under the project, provided that all the general conditions established in the General Standards of the Loan Contract have been met.** These funds will be used to establish the CCU, including the selection and hiring of personnel, procurement of equipment and outfitting of offices, as well as to perform the preparatory tasks for the project components.

2. Accounting and external audit

3.35 All transactions involving project funds will be recorded using an accounting system specifically designed and established by the CCU for this purpose, and

managed in close collaboration with the entity administering the funds. This accounting system will generate annual financial statements for the project, which will be audited by a firm of independent public accountants acceptable to the Bank. The SEA, through the CCU, will be contractually obligated to contract external auditing services for each year of project execution.

3.36 The audit must be performed and concluded within 120 days after the end of each fiscal year, and the results must be presented for consideration and approval by the Project Management Council. The annual cost of these external audits will be paid as a charge to the loan.

3.37 The project financial statements, audited by a firm of independent public accountants acceptable to the Bank, will be presented by the borrower within 120 days following the close of each budget year during project execution. The executing agency will present to the Bank, in addition to the annual financial statements of the project, and as the Bank may require, semi-annual audit reports on the status of the revolving fund and the status of the bank accounts used for handling loan funds and the counterpart contribution. The Bank will review and approve in advance the process for selecting and contracting the independent audit firm, including the terms of reference for the proposed work.

F. Monitoring

3.38 Execution of component 1 of the project will be subject to a plan for monitoring and supervision by a specialized firm. That firm will be expected to supervise execution of the project and use a statistical sampling method acceptable to the Bank to verify the support transactions that have been performed, with a frequency that will depend on the topic:

a. A report every four months on progress with the publicity campaigns and the processing of applications, identifying any operational problems impeding progress.

b. An audit will be performed every six months, on a sampling basis, to ensure that the support provided is consistent with the ceilings established (per technology and per farmer) and that the technologies have actually been adopted. This monitoring will include information on the principal characteristics of the beneficiary farmers (size of holding, income, main products, form of counterpart financing, among others) and on compliance with the environmental mitigation measures for each technology.

c. Annual monitoring of the environmental impact of the technologies, using a methodology that will include a selective sample of farmers who have adopted the technologies and farmers who have not done ***so,*** in order to identify the principal impacts.

3.39 The **SEA,** through the CCU, will contract an independent and duly qualified firm each year during project execution to conduct the indicated ex post verification, including as well the administrative and operations activities under components **2** and **3.** That firm's reports must be submitted to the Project Management Council within 15 days after receipt by the CCU. The costs of this contract will be paid as a charge to the loan. The conceptual and operational design of the monitoring process for component 1, and the contents of the terms of reference for hiring the firm, must be approved by the Bank.

G. Ex post evaluation

3.40 The government is interesting in cooperating with the ex post evaluation of the project's impact, but it is not prepared to finance it. The project team believes it important that the Bank should conduct an ex post evaluation of this project, given its innovative character. It is expected that the evaluation will provide information on: (i) the efficiency of the support mechanism for technology adoption, identifying the total amount of investment generated; (ii) its impact on productivity and competitiveness for the various products; (iii) the impact in terms of increased family incomes, particularly for poor farmers; (iv) any necessary adjustments in the operating mechanisms to improve the efficiency of the project. The executing agency will be able to provide much of this information as a result of its project monitoring activities.

IV. FEASIBILITY AND RISKS

A. Institutional feasibility

4.1 The institutional structure designed for the project recognizes that the SEA currently suffers from institutional weaknesses that limit its capacity. During project preparation a specialized institutional management consultant was contracted to design, drawing on similar experience in other countries of the region, all the necessary operational elements of a structure on the basis of which the SEA could execute the three components of the project.

4.2 The institutional structure that has been designed is considered adequate to the challenges of a project of this kind, because it will include the following: (i) rules and procedures to enable prompt execution; (ii) executive, technical and administrative personnel with appropriate qualifications, selected with the Bank's concurrence, and whose fees will have to be covered largely as a charge to the project; (iii) an interconnected information system for keeping records of accounts, controls and monitoring of operations financed by the project, and to facilitate document management, using the virtual document for handling operations, as well as operational equipment that will include vehicles, office and communications equipment; (iv) a manual of operations consistent with objectives and the need to keep operations management flowing smoothly; and (v) a bank (BANRESERVAS) which will have contractual responsibility for managing project funds: it currently has a national network of 75 branches, agencies and service centers located throughout the country, ***so*** that funds under the Technological Support Component should be properly channeled to farmers.

4.3 The borrower, through the SEA, will be obliged, as a result of various clauses to be fulfilled before the first disbursement, to: (i) establish the organizational structure described for executing the three components of the project; (ii) put the Project Operating Manual into effect, with its contents previously agreed with the Bank; and (iii) sign an agreement with BANRESERVAS for channeling funds under component 1 of the project.

B. Financial feasibility

4.4 The project's financial feasibility is considered reasonable overall. In the first place, the proposed project will be financed by a loan from the Bank equal to 90 percent of the total cost, reflecting the fact that the project will benefit people who fall below the poverty line established for the country. The remaining **10** percent, reflecting the local counterpart contribution, will be provided by the central government. The counterpart funding in each year will be no more than US$2.1 million, a figure that should pose no budgetary problems for the SEA. In addition, the SEA will make a series of significant budgetary adjustments in

existing projects (see paragraph 2.1), which will allow it to execute this project (local counterpart plus loan) without significantly increasing public spending in the sector.

C. Socioeconomic feasibility

4.5 The economic analysis focused on the first component of the project, Technology Adoption Support. The investments included in the menu of options were evaluated using information on yields and costs obtained from existing applications in the country, and valued at market prices as well as at economic efficiency prices, in order to verify that their adoption by farmers would be economically attractive for the country, even without distortions in external trade. Border prices were estimated at the farm or plantation level for exportable and importable products deemed representative of the areas in which each technology is most likely to be adopted. As well, there was an analysis of sensitivity to changes in yields, cost of investments and border price levels. Details of these calculations are found on the project technical files.

4.6 The analysis showed that, at private prices, six of the seven technologies proposed for 2002 are highly profitable for the farmers who adopt them. The case of greenhouses could not be analyzed because there is not enough reliable information on yields and production costs in the Dominican Republic. Nevertheless, there is broad international experience to suggest that this is an attractive alternative under the conditions proposed in the project.

4.7 The analysis using economic efficiency prices for the six technologies for which sufficient information was available produced the following conclusions:

a. Ground leveling (evaluated on the basis of rice) is highly profitable, with a ten-year internal rate of return (IRR) of 43 percent for the least initial cost scenario (RD$450/tarea) and 24 percent for the highest initial cost scenario (RD$650/tarea). If the price of rice is reduced by 15 percent, the IRR for the least initial cost is still 33 percent, while the IRR for the highest initial cost declines to 19 percent. These results are due to the higher yields that can be obtained, and do not include benefits in terms of lower irrigation water volumes, which could be very significant in some areas of the country, meaning that the economic return will be even higher.

b. Technical upgrading of irrigation, evaluated for micro-sprinklers on mango crops, which corresponds to one of the highest initial cost scenarios, is highly profitable, with an IRR exceeding 50 percent in 10 years, even if there should be a drop of 25 percent in mango prices, or a lower-than-expected increase in yields. This evaluation also excluded the benefits from water savings, which in some parts of the country could mean a very significant social return.

c. The zero tilling technology (calculated for rice on the basis of an annual application) creates benefits by reducing production costs, even without considering the significant changes that could be produced in incomes. Adoption of this technology cuts the unit cost of rice production by **26** percent under standard conditions in the country. This technology produces additional benefits that were not included in the evaluation, such as increasing the natural fertility of soils and reducing soil erosion, which could represent significant environmental benefits in several parts of the country.

d. The use of vitroplants, calculated for the installation of high-density banana plantations, generates significant benefits, both through the change in density and the increase in yields, as well as in the reduced period to maturity **(18** months vs. three years). The evaluation produced an IRR of **44** percent over a uniform period of six years for both kinds of plantations, and increased yields to levels that, on the basis of experience, are probably conservative. With a **25** percent fall in the price of bananas, the IRR remains about **17** percent, even without considering expected quality improvements from the new technology, which could well translate into higher prices.

e. Rehabilitation and maintenance of pasturelands, evaluated on the basis of increases in live animal production, is a profitable activity with an eight-year IRR of **28** percent. The IRR declines to **12** percent if the expected increase in yields is cut by **30** percent, a level of confidence that is considered reasonable. As with the zero tilling, pastureland rehabilitation generates significant benefits in terms of soil conservation in hilly areas where there is significant deterioration of existing pastures, a benefit that was not explicitly considered in this evaluation.

f. The planting of tree species on hillsides (calculated for pine, with **100** plants per tarea; harvest of **30** percent of existing stock in years **5, 8** and **12,** and the remainder in year **15)** is profitable, with an IRR of **16** percent. The planting of tree species on hillsides generates significant environmental benefits, which however could not be quantified and have therefore not been included in the evaluation.

4.8 The project qualifies as a poverty-targeted investment under the geographic classification criterion, since most of the beneficiaries live in conditions of poverty within zones identified as poor. The project files contain details on this analysis. Using information from the recent study entitled "Targeting Poverty **1997**" prepared by the National Planning Office of the Dominican Republic (ONAPLAN)', as well as data from the National Registry of Farmers and the **1996**

[4] **The statistical databases used in the ONAPLAN document are the 1996 Demographic and Health Survey and the 1993 National Population and Housing Survey.**

Demographic and Health Survey, it was verified that poverty is concentrated in rural areas, and that in these areas small-scale farmers are predominantly poor.

4.9 In addition, it must be recalled that the project provides incentives in its design for steering most of its benefits to small-scale farmers. The setting of area-based support ceilings per technology support and a cap on the maximum financing per beneficiary means that the assistance will be highly significant for small producers, and that its importance will diminish in inverse proportion to the size of properties. This incentive reinforces the poverty-targeted nature of the operation, which is not only focused geographically on zones with high poverty indices but provides incentives within those zones to give preference to the poor.

4.10 In the selection of technologies and in the design of procedures for support delivery under the first component of the project, special care was taken to ensure that there is no bias against women or minority groups.

D. Environmental feasibility

4.11 There is evidence of severe deterioration of natural resources in rural areas of the Dominican Republic. Farming in general, and the use and exploitation of forests, are frequently blamed for much of the destruction of the country's natural resources base.

4.12 A general environmental assessment of agriculture concluded that progress towards competitive agriculture will require the introduction and adoption of modern farming techniques that will reduce the environmental impacts of the techniques now in use. Given the severe deterioration in many components of the country's natural resource base, particularly its soils, water and forests, technologies are needed that will help reduce erosion, increase the efficiency of water use, reduce water pollution and increase the efficiency of chemical use, among other things.

4.13 The environmental assessment suggests that the technologies to be promoted under the first component of the project will help to achieve these environmental goals, while increasing productivity levels and/or reducing production costs.

4.14 The evaluation, which is summarized in Annex XIII (in the project's technical files) indicates, that the environmental impacts of the technologies identified are thoroughly positive. For those technologies that could imply a negative impact, mitigation measures have been indicated.

4.15 As well, to ensure the environmental results of the project, the CCU's functions will include: (i) monitoring and verifying that the environmental mitigation measures identified in the project are properly executed; (ii) including as part of the monitoring work to be contracted to a consulting firm (see paragraph **3.38)** an evaluation of environmental impacts, preferably after each crop cycle or when the operating conditions of each technology *so* permit, but at least once a year; and

(iii) prior evaluation of the impact of any new technology to be supported by the project, before its inclusion on the menu of eligible options, to ensure that its impact is positive. The monitoring procedures will compare environmental impacts in high-adoption areas with neighboring areas where ecological conditions are comparable but where there has been little or no adoption. Monitoring the project's impacts will also include measuring the impact of the technologies on productivity, on product competitiveness and on family incomes. In this way, those technologies that do not produce the expected benefits can be identified and discontinued, in favor of more appropriate ones.

4.16 The features of the food health and safety component suggest that it will have positive environmental impacts, because it will increase the government's capacity to provide phyto- and zoosanitary protection and food safety services. Previous studies indicate that the project should improve food quality and will therefore enhance health protection for domestic consumers while at the same time ensuring that export products are up to international quality standards. **As** well, by improving the capacity of the **SEA** to regulate the use of chemicals, the project will serve to improve the control, management and application of agrochemicals, and will help as well to reduce pollution of soil, water sources and products, and diminish the health risk to farm workers and consumers. This component includes small-scale physical works to upgrade quarantine laboratories; these works are to comply with applicable environmental standards. The third component will have no direct environmental impact, because it focuses on financing technical cooperation aimed at the design of agricultural reforms.

E. Risks

4.17 The principal risk to the project would be the unexpected implementation of practices to provide support for adopting technology under component 1 on the basis of discretionary criteria that favor specific beneficiaries. To minimize this risk, steps have been taken on several fronts: (i) the design of the project calls for simplified administrative procedures to reduce discretion as far as possible in the allocation of support funds; (ii) there will be a major emphasis on publicizing the project's operating rules to ensure that information about the availability and nature of the support reaches all farmers, particularly small-scale ones; and (iii) the project's operational design makes special provision for the Producers' Registry to be used effectively, and for eligible and recipient areas to be properly monitored. **As** well, the Bank's financial involvement will mean the use of strict standards of auditing and financial accountability.